5-26-1995

CropWatch No. 95-11, May 26,1995

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CROP WATCH

University of Nebraska Cooperative Extension
Institute of Agriculture and Natural Resources

No. 95-11
May 26, 1995

Assessing the corn planting situation: is it better to change or to be patient

Eastern Nebraska

Cool wet weather continues to inhibit field work for many producers in Nebraska. Farmers in southeastern Nebraska appear hardest hit; experiencing periodic rains and poor drying weather between showers. The Nebraska crop reporting service estimates less than 10% of the corn in southeast Nebrasaka has been planted. Based on the best available data, crops specialists have recommended not changing to earlier varieities until the end of May or early June. Since we are there, it is time to think about either changing to earlier corn hybrids or changing crops altogether.

In general, do not change to hybrids that are more than five to

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Inside

Factors to consider

The decision to change to shorter season corn hybrids or to alternative crops must be based on several factors:

1) yield potential of the earlier maturing hybrid versus the hybrid originally chosen;

2) the producer's ability to use poor quality, wet, or light test weight corn grain if a killing freeze occurs before physiological maturity;

3) the producer's willingness or ability to accept risk of an early fall freeze;

4) government farm programs and the need to maintain feed grain base acreage;

5) herbicide carryover or herbicides and/or fertilizers already applied;

6) a producer's equipment, experience, and available markets for alternative crops.

South central Nebraska

In an average year, all of Nebraska's corn crop and much of its soybean crop would be in the ground by now, with many producers already assessing emerging plants. This year, however, producers in some areas of Nebraska haven't completed planting and still others are assessing whether to replant or change crops.

With the rainfall we've had in south central and eastern Nebraska, many farmers will be unable to get back in their fields before May 30. If planting is delayed beyond then, farmers should consider the advantages of switching from corn to an alternative crop, namely soybeans or grain sorghum.

Research has shown that the optimum time to plant corn in south central Nebraska is about April 30. As planting is delayed beyond that time, yield reductions typically occur. Because of the risk factor of fall freeze damage, most farmers have probably already switched from longer-season (115-day) to mid-season (110-day) corn, Yield potentials are very similar now for both of these maturity classes; however, at this point, it may be better to plant soybeans or sorghum instead of corn.

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USDA delays changes to private recordkeeping

The U.S. Department of Agriculture has announced a delay in the implementation of changes to the recordkeeping requirements for certified applicators of federally restricted-use pesticides. Changes were to be implemented on May 11, 1995.

USDA spokesman Lon Hatamiya said the postponement to an August 1, 1995 effective date will allow the agricultural community more time to adjust to the changes.

"This is the busy planting season and the extra time will provide producers, growers, and farmers more time to learn about the new requirements and will not require private applicators to make adjustments in their recordkeeping procedures during this peak planting time," Hatamiya said.

The requirement to keep records of federally restricted-use pesticides is still in place and only the amendments to the original regulations have been delayed. The amendments to the pesticide recordkeeping regulations that take effect August 1, 1995 include:

— reducing the time to record a restricted use pesticide application from 30 days to 14 days;

— changing how locations for spot applications are recorded. This record must now include a concise description of location and treatment;

— clarifying access to and release of pesticide records for medical treatment;

— clarifying provision for penalties.

University of Nebraska Extension Circular 2540 is a pocket-sized record booklet that guides private applicators to compliance with the USDA recordkeeping requirements. It also provides EPA registration numbers for commonly used restricted use pesticides. Related crop records on field operations, equipment used, fertilizer applied and irrigation can be recorded. It is available from your local Cooperative Extension Office.

Larry Schulze
Extension Pesticide Coordinator

Eastern

(Continued from page 75)

eight days earlier in maturity than full season hybrids typically planted in your area. Do not consider changing soybean variety or grain sorghum hybrid to earlier maturity groups at least until mid June.

Soybean plants flower based on photoperiod, and as long as the plants are growing by June 21 (when day-length begins decreasing), the plants will flower at the normal time and should develop and mature accordingly. Yield potential for grain sorghum do not begin to drop appreciably unless planting is delayed well into June.

For further information on making these decisions, look at the example financial calculations on page 77.

Todd Peterson
Extension Cropping Systems Specialist

CROPWATCH

Crop Watch is published from March through November by the University of Nebraska Institute of Agriculture and Natural Resources Communications and Information Technology, PO Box 830918, 108 Agricultural Communications Bldg., UNL, Lincoln, NE 68583-0918. To order a subscription or to change your address, write to *Crop Watch*, Box 830918, 108 Agricultural Communications Bldg. or call (402) 472-7981.

Lisa Brown Jasa, Editor

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South central (Continued from page 75)

Before deciding whether to switch from corn to another crop, several factors need to be considered, including differences in yields and costs of production. We're already looking at a yield reduction in corn because of the late planting date. Farmers may be able to compensate for some of these losses by planting soybeans or sorghum, rather than switch to short season corn. To better evaluate the economic ramifications of switching, several models have been prepared.

If corn was typically planted on April 30, the farmer would expect a 100% yield potential. However a May 30 planting date would decrease expected yields by 25%. Therefore, a field that typically produces 170 bushels per acre of corn planted on April 30 would now be expected to produce 128 bushels per acre. Farmers need to consider how much yield in soybeans or grain sorghum would it take to be as profitable as 128-bushel corn.

We have compiled data that included production costs and potential yield reductions from late planting and from fall frost to determine the financial break-even yield of alternate crops that would be needed to replace the expected corn yield.

An example of corn yield potentials for May 30 planting dates relative to "break-even" yields of soybeans and grain sorghum, south central Nebraska.

	Corn Yield (bu/a)		*Break-even Yields (bu/a) for Alternative Crops*		
	Planted on		*Soybeans Planted on*		*Grain Sorghum Planted on*
	*April 30**	*May 30*	*May 15**	*May 30*	*May 30**
Irrigated	170	128	39	36	114
Non-irrigated	95	85	32	30	90

*Optimum planting dates

To replace the 128-bushel per acre irrigated corn, a farmer would need to produce 36 bushel-per-acre irrigated soybeans or 114-bushel-per-acre irrigated grain sorghum. If a farmer knows his field is capable of producing more than 36 bushels per acre of soybeans, then it would be economically advantageous to plant soybeans. The yield potential on May 30 planted soybeans would be about 8% less than if they were planted in mid-May.

The key to making a sound decision is knowing the field's potential and then comparing which crop has the capability to provide the highest economic return.

A similar scenario can be used for dryland crops as well. The optimum planting date for grain sorghum usually begins around May 30. If the expected dryland sorghum yield is 90 bushels, dryland corn would have to yield 85 bushels to be as profitable. Using the same format, break-even yields for soybeans would be 30 bushels per acre.

Another decision some farmers must consider is whether to plant their soybeans or sorghum first. The optimum planting date for soybeans is about May 15, although they can be planted well into June. However, as the planting date is delayed, just like corn, there will be a potential yield reduction.

The curve for yield potential drops off rather sharply for soybeans as planting is delayed into June. It's critical to get beans in the ground as soon as possible. The production curve for sorghum is fairly level through the second week of June, so there is still time to plant sorghum before giving up a lot of yield potential.

If you have not planted your corn acres by now, consider the various options. Unfortunately, there are no surefire answers. Each field must be analyzed on an individual basis before management decisions can be made.

Roger Elmore
Extension Crops Specialist
Roger Selley
Extension Farm Economist
Kim Peterson
Communications Associate
all in the South Central District

Correction

In the May 19 *CropWatch*, two application rates listed for Roundup + Banvel were incorrect. All the responses noted in the weed population were correct.

—The first fall rate should be 1 qt + 0.5 pt.

—The second fall rate should be 2 qt + 1 pt.

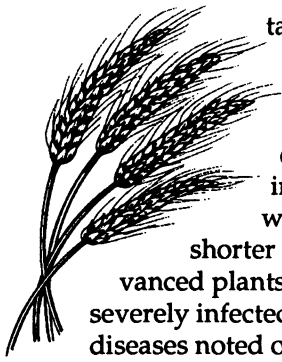
For more detailed information concerning CRP burndown responses see the *1995 Guide for Herbicide Use in Nebraska*, a UNL Cooperative Extension publication.

Dave Holshouser
Extension Weeds Specialist

Western wheat tour finds few diseases; rust moves into southeast/south central

A recent wheat disease survey of the Nebraska Panhandle, eastern Wyoming and northeast Colorado showed no major disease activity in that region as of May 19. Participants in the multi-state survey were Jack Riesselman (Montana State University), Bill Brown (Colorado State University, Gary Franc (University of Wyoming), Eric Kerr (University of Nebraska-Panhandle REC) and John Watkins (University of Nebraska-Lincoln). The wheat ranged from growth stage 7 to 9 (Feekes scale). In general the wheat appeared in good condition, although a few fields were rated poor to fair. Color ranged from light green to dark green with some purpling. The color was probably due to an interaction involving soil type, fertility and cold temperature.

The most evident disease was tan spot which was present in those fields containing wheat residue. Severity ranged from light to moderately severe. Generally the



taller more advanced plants showed only light infection whereas the shorter less advanced plants were more severely infected. Other diseases noted on the survey were minor root rot and Cephalosporium stripe. Incidence of both diseases was sporadic; however, Cephalosporium stripe was moderately severe in a few fields in eastern Wyoming. Russian wheat aphid presence was noted in some fields.

Leaf rust finally made its presence in southeast and south central Nebraska. With warmer weather and frequent rains, rust will develop rapidly on susceptible varieties. The first evidence of rust infection is a light green flecking on the leaves that precedes the eruption of the orange pustules. Remember the key to cost effective fungicide control is keeping the upper leaves relatively free of infection, so the decision to spray will need to be made fairly soon. Spraying this early may not keep the flag leaf completely free of leaf rust during grain fill but it will delay its initial development and reduce overall severity. This should be sufficient enough to maintain yields.

One thing to consider before spraying a field is the presence of and severity of soil-borne wheat mosaic. If soil-borne mosaic is severe then yields may have already been hurt and it might not pay to spray for leaf rust. Fields severely affected by soil-borne mosaic will have yellowed and somewhat stunted plants compared to plants in nonaffected fields. Growers should scout fields and know what diseases are present before deciding to spray for leaf rust.

John E. Watkins
Extension Plant Pathologist

Rope-wick needed to control rye in wheat

During the past two weeks, dark green clumps of growth have been erupting above the winter wheat canopy. The first hope is that it is just a little localized area of high fertility, but soon the reality sinks in. It is RYE!

Rye is a winter annual grass that is very competitive with winter wheat. Additionally, the presence of rye seed in winter wheat grain may result in dockage, grade reduction due to foreign materials, and a decrease of wheat quality. Grain buyers are becoming increasingly concerned about rye in winter wheat since recent federal grain standards reduced the tolerable foreign material allowed for U.S. No. 1, 2, and 3 grade wheat.

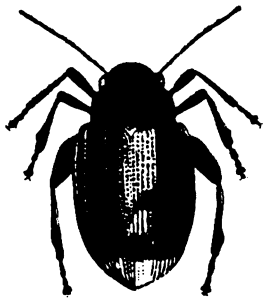
Currently, a herbicide is not available that selectively controls rye in winter wheat; however, Roundup can be used in a rope-wick applicator. The rye should be 10 to 12 inches taller than the wheat for best results. In heavy stands of rye, apply the treatment in both directions. Remember that if you contact the wheat with the rope-wick or drip the herbicide on the crop it will cause injury. The Roundup should be mixed at a 33% concentration or 1 gallon with 2 gallons of water. Do not add surfactant. Small infestations may be controlled by pulling or breaking off plants at ground level shortly after heading. Once plants reach the soft dough stage, the seed becomes viable so deal with the problem now, rather than later.

Drew Lyon, Extension Dryland Cropping Systems Specialist
Bob Klein, Extension Cropping Systems Specialist
Gail Wicks, Extension Weeds Specialist

Flea beetles feeding in corn

The corn flea beetle has been reported feeding on seedling corn leaves in several fields in southeast Nebraska. These beetles are approximately 1/16 inch long, shiny, dark-colored with thickened hind legs that allow them to jump quite readily when disturbed. They overwinter in the adult beetle stage in protective areas such as windbreaks or fencerows.

At this time of the season, they feed on the leaves by stripping off the top layer of cells, leaving gray or brown tracks or scratches. Heavily damaged leaves may shrivel and die. This damage can appear worse than it really is and usually the feeding alone is not serious enough to kill plants, however, plants that are already stressed due to cool, wet soils may die when subjected to this sort of damage. The worst potential outcome of this feeding is that the flea beetles can transmit Stewart's Bacterial Wilt to the corn. This disease can seriously reduce yields of susceptible hybrids with chaffy, small ears and stalk rots resulting. Fortunately, many modern, commercial hybrids are resistant to this disease.



Flea beetle

Growers should consider insecticide treatments to control the flea beetles when damage is present and there are five or more flea beetles present per seedling (less than 6 inches tall) corn plant. Corn taller than 6 inches tall can generally withstand the feeding of five or more flea beetles per plant. Several insecticides are registered for and effective in controlling flea beetles in corn. A list of these along with recommended application rates is in *Insect Management Guide for Nebraska Corn and Sorghum* (EC94-1509) available at your University of Nebraska Extension Office.

Steve Danielson
Extension Entomologist

Black cutworm damage expected

Mild weather conditions coupled with speedy planting into weedy fields poses high potential for cutworm injury to corn after emergence. Scouting for black cutworms now is important to management.

Our predictive model indicates that black cutworms were capable of cutting plants as early as Thursday (May 25) and would continue through the first week of June, depending upon latitude location.

We have not received any reports of cutworm injury yet; however there have been reports of wireworm injury in some fields where corn has emerged.

The number of black cutworm moth captures in southeast Nebraska declined last week. Those counties with significant moth captures (eight over two nights) May 15-21 were: Johnson, Burt, and Valley.

Jim Kalisch, Extension Technologist, Entomology

Clover leaf weevils sighted

We have been asked about the presence of clover leaf weevil larvae in alfalfa and whether this represents a threat to the crop. These larvae appear much like an alfalfa weevil larvae except they are somewhat larger, have brown heads, and there is a pinkish colored area on each side of the white racing stripe down the back. Also, the clover leaf weevil larvae spend the day resting at the base of the plant and only feed up on the foliage at night, while the alfalfa weevil larvae spend day and night feeding on the foliage.

Generally, we do not consider the clover leaf weevil to be an economic pest in the larval stage because it tends to feed primarily on lower leaves that are shaded, contribute little to photosynthetic activity in the plant, and often drop off by harvest anyway. When insecticides have been used to control the larvae and reduce their feeding, no increases in yield have resulted. Occasionally, the adults that develop from these larvae and emerge at or after the first harvest will cause significant delays in regrowth due to feeding on the newly developing buds. This adult feeding is not usually a problem however and scouting for regrowth a few days after harvest will detect such a problem.

Clover leaf weevil

Adult

Larvae

This insect is very susceptible to a fungus disease that is promoted by wet, warm weather like we have been having a lot of this year. It is very possible that the remaining clover leaf weevils will be killed before reaching the adult stage by this fungus.

Steve Danielson
Extension Entomologist

Late nitrogen applications still viable

There is still time to apply nitrogen to corn once the crop is planted. If producers took preplant soil samples last fall or early this spring, they should address the availability of residual and preplant nitrogen as discussed by Don Sander in last week's CropWatch.

Since that time there have been additional heavy rains in some areas. If such rains have increased the seasonal total more than 10 inches since application, producers should consider applying an additional 40 pounds of nitrogen per acre. Preplant soil samples are still the best guide to how much nitrogen is available in the root zone. Residual nitrate-N is still there, but may have moved deeper.

If no preplant samples were taken there is the possibility of taking a late spring soil nitrogen test. The Pre-Sidedress Nitrate Test (PSNT) was first developed in Vermont and is routinely recommended in more humid climates. There has been extensive work in Iowa and some research in Nebraska concerning its use.

The PSNT can be used to evaluate soil nitrogen availability but it does have some limitations when it comes to nitrogen applications. The PSNT soil nitrate levels are a good indicator of whether to apply nitrogen. If the test is high it indicates that no additional nitrogen is required; however, low levels may not necessarily be a good indication on which to base a nitrogen recommendation.

The PSNT involves sampling the surface zero to 12 inches of soil when corn is 6 to 12 inches tall. Current Nebraska information indicates that if the soil test is above 21 ppm nitrate-N in this depth, no additional nitrogen fertilizer is needed. At lower nitrate levels, however, nitrogen fertilizer will be needed to maximize yields. It's assumed that little nitrogen will be lost after PSNT sampling, unless there is excess rainfall like we experienced in 1993 or if there is overirrigation. High nitrogen losses can result in nitrogen deficient corn. This can be a problem on sandy soils in Nebraska.

Nebraska guidelines for making a fertilizer recommendation from a PSNT have not been developed. The guidelines from Iowa assume that it takes about 8 pounds of preplant nitrogen per acre to increase soil nitrate-N by 1 ppm. Using the Iowa base of 25 ppm assuming a soil test of 10 ppm would be calculated using the formula below.

lbs N per acre = (25 - 10) X 8 =
120 pounds N per acre

for optimum corn production. In the Iowa model no additional information about yield or soil organic matter is given. How does this value compare with something that we know from preplant nitrate-N tests in Nebraska?

If we use our existing nitrogen recommendation algorithm for a soil that has 2% organic matter and 10 ppm nitrate in the zero to 1 and the 1 to 2 foot level, the nitrogen recommendation would be 110 lb N/a for a 170 bushel corn crop. Because a recommendation algorithm for the PSNT has not been developed, it is probably best to take the PSNT sample to at least a 2 foot depth and then use the existing Nebraska nitrogen recommendation from NebGuide G74-174, *Fertilizer Suggestions for Corn*, to calculate the nitrogen fertilizer required. The only caution is that the PSNT sample may overestimate the nitrogen required if there is sufficient residual nitrate-N between 2 and 4 feet.

The nitrogen needed can be sidedressed at any time. Usually we think of sidedressing at the six leaf stage or when plants are 12 to 18 inches tall. That will be late June in many areas this year and may even be near the Fourth of July. However, sidedress nitrogen can be applied any time after planting. With the equipment available today it is possible to apply right after planting.

This may be especially important if anhydrous ammonia or solutions are used in fields that will be furrow irrigated. Nitrogen could be applied immediately after planting. This would allow time for the nitrogen to nitrify, move into the soil, allowing cultivation and ditching later. For pivot irrigated or dryland sites there is a wider time window for the sidedress application.

Another option still available for many producers is application of nitrogen with irrigation water. Recent history of 1993 reminds us that nitrogen was required on many fields and water was not because of the above normal precipitation. As a hedge against that possibility growers who normally apply through irrigation water may want to consider sidedressing at least a portion of their nitrogen this year.

Gary Hergert
Extension Soils Specialist
West Central District

The next *CropWatch* will be June 9.

Postemergence herbicides released

Several new postemergence herbicides have been registered since late 1994. *Basis* a combination of rimsulfuron and thifensulfuron (the active ingredient in Pinnacle), from DuPont is registered for use in corn. *Broadstrike Post Corn* from Dow Elanco is a combination of Broadstrike + Stinger + 2,4-D and is registered for use in corn but will not be available until the 1996 season. *Exceed* from Ciba, is a combination of Beacon and prosulfuron is also registered for use in corn. *Permit* form Monsanto has the active ingredient halosulfuron which is registered for broadleaf weed control in both corn and sorghum. *Resource* from Valent has the active ingredient of flumiclorac and is registered for broadleaf weed control in corn and soybeans. Resource is especially active on velvetleaf.

Our experience with these herbicides is limited compared with established products. The table lists the projected performance of these herbicides against an array of weeds.

Alex Martin
Extension Weeds Specialist
John McNamara
Extension Assistant, Weed Science

HERBICIDE	A. Morningglory	Barnyardgrass	B. Nightshade	Cocklebur	Crabgrass	Fall Panicum	Foxtail	Jimsonweed	kochia	Kochia-TR	Lambsquarters	Pigweed	Ragweed	R. Thistle	Sandbur	Shattercane/Sorghum	Smarweed	Sunflower	Velvetleaf	W. Buckwheat	Crop Safety	Recrop (months)
	RATING																					
Basis	2	7	4	6	2	7	7	4	3	3	8	9	5	4	6	-	8	6	9	-	2	2-12
Broadstrike Post Corn	10	2	8	10	2	2	2	8	6	6	9	9	8	-	2	2	9	10	9	8	2	2-12
Exceed	5	2	7	9	2	2	2	8	8	8	7	8	9	-	2	9	8	10	9	9	1	2-18
Permit	3	2	2	10	2	2	2	4	4	4	4	8	9	-	2	2	7	10	9	3	1	2-10
Resource	-	2	-	7	2	2	2	7	-	-	7	7	8	-	2	2	4	4	9	-	2	1

Response Rating:

10 — (96-100%)
9 — (90-95%)
8 — (85-89%)
7 — (80-84%)
6 — (70-79%)
5 — (60-69%)
2-4 — < 60
1 — 0

Herbicide additives improve control

Postemergence herbicide activity is strongly influenced by the additives included in the spray mixture. The degree of weed control and crop injury potential are both influenced by additives. Usually, but not always, additives that increase weed control also increase the crop injury potential.

The most widely used additives can be grouped in three categories: 1) oil, 2) nonionic surfactants, and 3) fertilizer concentrates. Oil concentrates include petroleum and seed derived oils. Ammonium containing fertilizers are effective as additives with 28% N(UAN), ammonium sulfate and 10-34-0 being the most widely used. While oils and surfactants function at the waxy leaf surface, ammonium functions inside the cell wall. Fertilizers are not surfactants and do not replace the need for oils or surfactants in the spray mixture.

It's always dangerous to make general statements about additives since the effects are both herbicide and weed specific. Nonetheless, a generalized ranking of additives in terms of weed control and crop injury potential is: petroleum crop oils = methylated seed soil> nonmethylated seed oil> nonionic surfactants. Obviously product labels must be consulted for specific information.

Oil-based additives often have an advantage over the others when it is hot, dry, and the weeds and crop are growing slowly due to the stress. It is only under such conditions that an oil is suggested with some herbicides. Examples include Bladex and Classic + Pinnacle. Environmental conditons play a role in additive selection. Ammomium containing fertilizer often improves performance on certain weeds, especially velvetleaf.

Alex Martin
Extension Weeds Specialist
John McNamara
Extension Assistant, Weed Science

(See tables on page 82 and 83)

Additives for post corn herbicides

Check the label for specific additive rates and use conditions. Weather conditions, crop and weed growth stages and herbicide rate will determine the proper additive and use rate.

Herbicide	*Nonionic surfactant*	*Nonionic surfactant +28%N*	*Crop oil concentrate*	*Crop oil concentrate plus 28% N*	*28% N*
Atrazine	no	no	yes	no	no
Contour	no	yes**	no	yes**	no
Basis	no	yes	no	yes-drought	no
Bladex 90DF	yes	no	vegetable oil-dry	no	no
Extrazine II 4L	no	no	no	no	no
Extrazine II DF	yes	no	vegetable oil-dry	no	no
Accent	yes	yes**	yes	yes**	no
Beacon	yes	yes**	yes	yes**	no
Pursuit	no	yes	no	yes	no
Banvel	no	no	no	no	no
Buctril	no*	no	no*	no	no*
Clarity	yes-dry	no	yes-dry	no	yes
2,4-D	no	no	no	no	no
Exceed	yes	yes	yes	yes	no
Accent + Atrazine	no	no	yes	yes	no
Accent + Banvel	yes	yes	no	no	no
Accent + Buctril	yes	yes	no	no	no
Laddok	no	no	yes	yes	yes
Marksman	yes	no	yes*	no	yes
Buctril + Banvel	no	no	no	no	no
Sencor + Basagran	no	no	no	no	yes
Accent + Buctril + Atrazine	yes	yes	no	no	no
Beacon + 2,4-D	yes	no	no	no	no
Beacon + Banvel	yes	no	no	no	no
Beacon + Buctril	yes	no	no	no	no
Permit	yes	yes	yes	yes	no
Permit + Banvel	yes	no	no	no	no
Permit + Buctril	yes	yes	no	no	no
Permit + Accent or Beacon	yes	no	no	no	no
Shotgun	no	no	no	no	no
Resolve (imi corn)	no	yes**	no	no	no
Resource	no	yes**	yes	yes**	no

*Labeled but not normally used due to crop injury.

**Ammonium sulfate (spray grade) can be substituted for UAN.

Tables for rainfast herbicides and additives for post sorghum will appear in future issues.

Additives for post soybean herbicides

Check the label for specific additive rates and use conditions. Weather conditions, crop and weed growth stages and herbicide rate will determine the proper additive and use rate.

Herbicide	*Nonionic surfactant*	*Nonionic surfactant +28% n*	*Crop oil concentrate (COC)*	*Crop oil concentrate +28 % n*	*Dash alone*	*28% N (UAN)*	*Dash + 28% N (UAN)*
Assure II	yes	yes**	yes	yes**	no	no	no
Basagran	no	no	yes	yes**	yes	yes**	no
Blazer	yes	no	yes*	no	no	yes	no
Classic	yes	yes**	yes*	yes* **	no	no	no
Cobra	yes	no	yes*	no	no	yes**	no
Fusilade or Fusion	yes	yes	yes	yes	no	no	no
Galaxy	no	no	yes *	no	no	yes**	no
Option	no	no	yes	no	no	no	no
Pinnacle	yes	yes**	yes* (if dry)	yes* ** (if dry)	no	no	no
Poast plus	no	no	yes	yes**	yes	no	yes **
Pursuit	no	yes	yes	yes* **	no	no	yes* **
Scepter	yes	no	yes	no	yes	no	no
Scepter OT	yes	no	no	no	no	no	no
Select	no	no	yes	yes	no	no	no
Basagran + Blazer	no	no	yes*	no	no	yes **	no
Basagran + Poast Plus	no	no	yes	yes * **	no	yes**	yes**
Basagran + Blazer + Poast Plus	no	no	yes	no	no	no	no
Basagran + Scepter	yes	no	no	no	no	no	no
Blazer + Poast Plus	no	no	yes *	no	no	no	no
Classic + Assure	yes	yes* **	yes	yes **	no	no	no
Classic + Pinnacle + Assure	yes	yes* **	no	no	no	no	no
Fusilade + Basagran	yes	no	yes	no	no	no	no
Option + Basagran	no	no	yes	no	no	no	no
Pinnacle + Basagran	no	yes	no	yes* ** (if dry)	no	no	no
Pinnacle + Classic	yes	no	yes*	no	no	no	no
Concert	no	yes**	no	yes	no	no	no
Synchrony (sts beans)	no	no	yes	yes**	no	no	no
Resource	no	yes**	yes	yes**	no	no	no
Rezult	no	no	no	no	no	yes**	no

*Crop injury potential is enhanced with coc. Use only for labeled conditions.
**Ammonium sulfate (spray grade) can be substituted for UAN.

Streamflows 4-6 times normal

After a brief reprieve from the rains, the upper level trough over the western United States has reestablished itself. Pieces of energy from this system will move out over the Central Plains through this weekend. The end result will be heavy to excessive rain over Iowa, Kansas, Missouri, and southern Nebraska. Storm totals from this system are projected to top 2 inches in most areas, with isolated areas exceeding 5 inches.

The Water Availability subcommittee of the Governor's Climate Assessment Response Committee (CARC) met May 19 to assess the impact of the persistent precipitation. Specialists reported on a variety of related topic, some of which are highlighted below.

Glen Engel, Geological Survey, reported that streamflows across the state are normal to above normal. Over eastern Nebraska, some streams are running four to six times their normal flow rate. Under normal conditions, streamflows will quickly respond to heavy rain events, but will fall back to near normal flows within a couple of days. This year streams are not returning to normal levels. Additional rains will likely cause flooding, especially on the Blue, Nemaha, lower Platte, and Missouri south of Plattsmouth.

Guy Lindman, Department of Water Resources, indicated that reservoirs were in good condition. If current conditions continue, it is expected that Wyoming irrigators will not require as much water and the snowpack runoff can be used to rebuild Wyoming reservoirs.

Forecasts to October are for below normal temperatures.

Al Dutcher, State Climatologist
Agricultural Meteorology

Growing degree day accumulations

As of May 21

Location	Mar 1 32°F	Apr 1 32°F	Mar 1 40°F	Apr 1 40°F	Jan 1 48°F	May 14 50°F
Ainsworth	1050	722	645	437	490	66
Alliance	1018	705	648	440	475	59
Arthur	1058	726	675	447	524	60
Beatrice	1361	957	879	625	615	73
Central City	1247	892	786	567	554	72
Clay Center	1268	885	817	573	585	70
Concord	1114	836	681	522	416	77
Curtis	1224	860	781	548	614	65
Elgin	1089	794	660	484	445	70
Gordon	965	667	599	401	422	58
Grant	1125	782	734	499	599	64
Holdrege	1292	886	845	576	660	69
Lincoln	1423	1015	906	658	618	81
McCook	1308	918	848	586	692	71
Mead	1292	942	826	613	558	81
North Platte	1177	819	751	520	599	63
O'Neill	1068	773	665	472	472	69
Ord	1156	815	733	512	526	66
Red Cloud	1357	939	882	613	642	68
Rising City	1231	886	771	563	519	75
Scottsbluff	1094	753	707	478	530	59
Shelton	1277	884	819	569	605	70
Sidney	1050	712	672	445	511	57
Tarnov	1131	830	711	526	479	71
West Point	1184	886	737	563	473	78

Precipitation

	5/15-5/21 Act.	Nrm.	%	Sep 1-4/21 Act.	Nrm.	%
Ainsworth	.39	.77	51	14.62	11.74	124
Alliance	.91	.77	118	8.64	8.41	103
Arthur	.16	.77	20	8.35	9.25	90
Beatrice	.99	.91	109	18.94	17.05	111
Central City	.02	.95	2	10.46	15.31	68
Clay Center	.51	.92	56	15.59	15.26	102
Concord	.00	.91	0	15.46	16.10	96
Curtis	.12	.77	15	6.95	10.27	68
Gordon	.51	.70	73	10.08	8.93	113
Grant	.51	.77	66	8.41	9.54	88
Holdrege	.79	.98	81	12.61	13.35	94
Lincoln	.61	.91	67	16.46	16.44	100
McCook	.75	.77	97	7.89	10.62	74
Mead	.51	1.12	46	16.09	20.60	78
North Platte	.12	.77	15	8.58	9.99	86
O'Neill	.00	.76	0	14.57	12.49	117
Ord	.00	.77	0	13.43	12.84	105
Red Cloud	2.53	.98	258	16.37	14.43	113
Rising City	.08	.61	13	16.54	15.04	110
Scottsbluff	.59	.63	94	7.68	8.58	90
Shelton	.02	.84	2	11.53	14.03	82
Sidney	.47	.70	67	13.66	7.77	176
Tarnov	.24	.91	26	15.12	13.92	109